20MCA281 - INTERNET OF THINGS

ASSIGNMENT

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Qn : IOT based Applications of FOG computing.

Fog computing is a decentralized computer architecture that processes and preserves information between the source of origin and the resources of the cloud. This contributes to the minimization of overhead data transfer and ultimately increases computational efficiency on cloud networks by reducing the need to process and retain vast quantities of superfluous data. The Fog computing paradigm is primarily driven by a continuous rise in Internet of Things (IoT) devices, where an ever-growing amount of data is generated from an ever-expanding array of devices (in terms of scale, variety, and velocity).

- **Linked vehicles:** Self-driven or self-driven vehicles are now available on the market, producing a significant volume of data. The information has to be easily interpreted and processed based on the information presented such as traffic, driving conditions, environment, etc. All this information is processed quickly with the aid of fog computing.

- **Smart Grids and Smart Cities:** Energy networks use real-time data for the efficient management of systems. It is necessary to process the remote data near to the location where it is produced. It is also likely that data from multiple sensors will be produced. Fog computing is constructed in such a manner that all problems can be sorted.

- **Real-time analytics:** Data can be transferred using fog computing deployments from the location where it is produced to different locations. Fog computing is used for real-time analytics that passes data to financial institutions that use real-time data from production networks.

Smart grid.

Smart grid is the next generation electric power distribution network. Smart grids contain transmission lines, substations, transformer and so forth. It utilizes bidirectional streams of power and data to create an automated and distributed strengthen energy distribution network. Smart grid gives an obvious energy distribution where service providers and customer can monitor and control their pricing, production and consumption in real time. In big data environment millions of smart meters are fixed in the consumer home. At the edge process, fog collectorare used to collect, process and filter information locally and for long storage information can be send to cloud data center.

➢ Telehealth

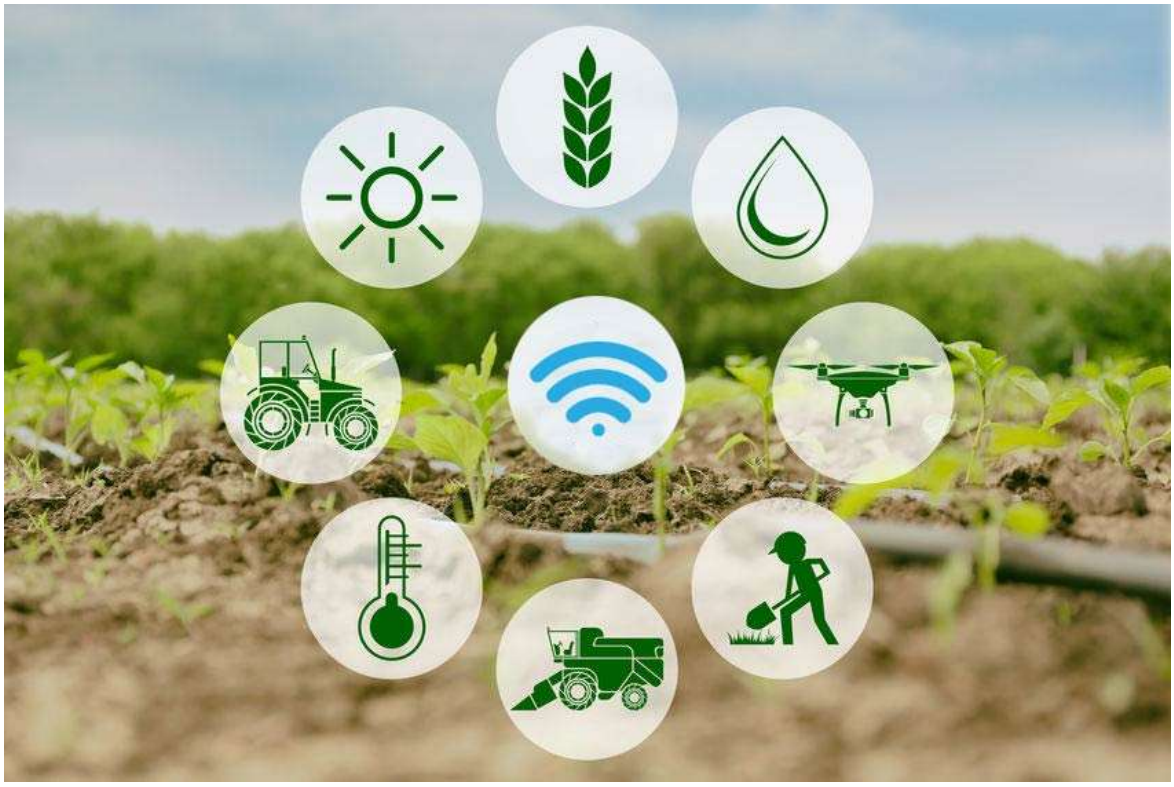
Telehealth, or Telemedicine, hasn't completely flourished yet. Nonetheless, it has great future potential. IoT Examples of Telemedicine include the digital communication of Medical Imaging, RemoteMedical Diagnosis & Evaluations, Video Consultations with Specialists, etc.

Wearables

Wearables remain a hot topic in the market, even today. These devices serve awide range of purposes ranging from medical, wellness to fitness. Of all the IoT startups, Jawbone, a wearables maker, is second to none in terms of funding.

⊙ Smart Farming

Farming is one sector that will benefit the most from the Internet of Things. With so many developments happening on tools farmers can use for agriculture, the future is sure promising. Tools are being developed for Drip Irrigation, understanding crop patterns, Water Distribution, drones for Farm Surveillance, and more. These will allow farmers to come up with a more productive yield and take care of the concerns better.

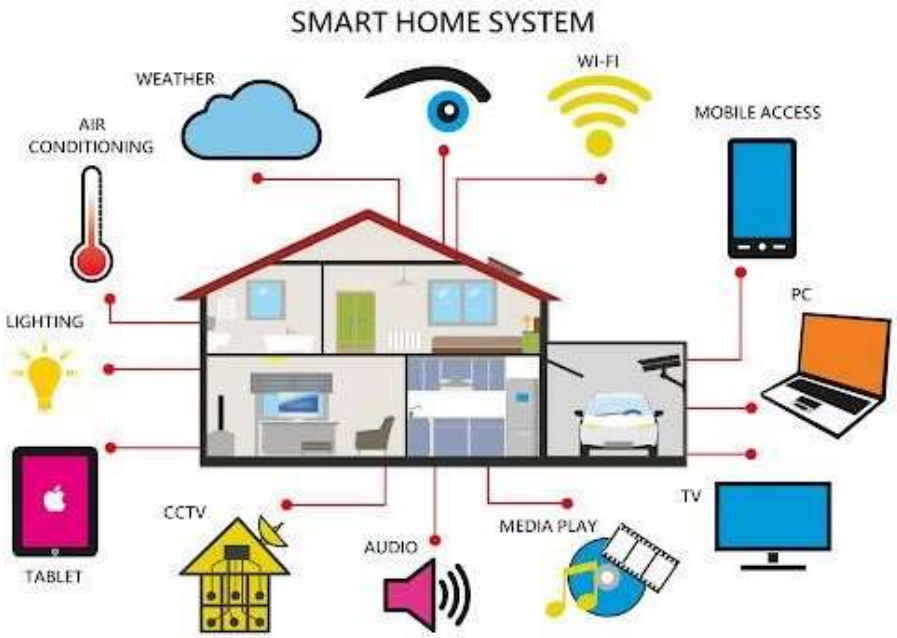


⊙ Connected Cars

Any vehicle/car which can connect to the internet is called a Connected Car. Usually, such vehicles connect to the internet via WLAN (Wireless Local Area Network). A connected vehicle can also share the internet with devices inside and outside the car, and at the same time can also share data with any external device/services. Connected vehicles can always access the internet to perform functions/download data when requested by the user.

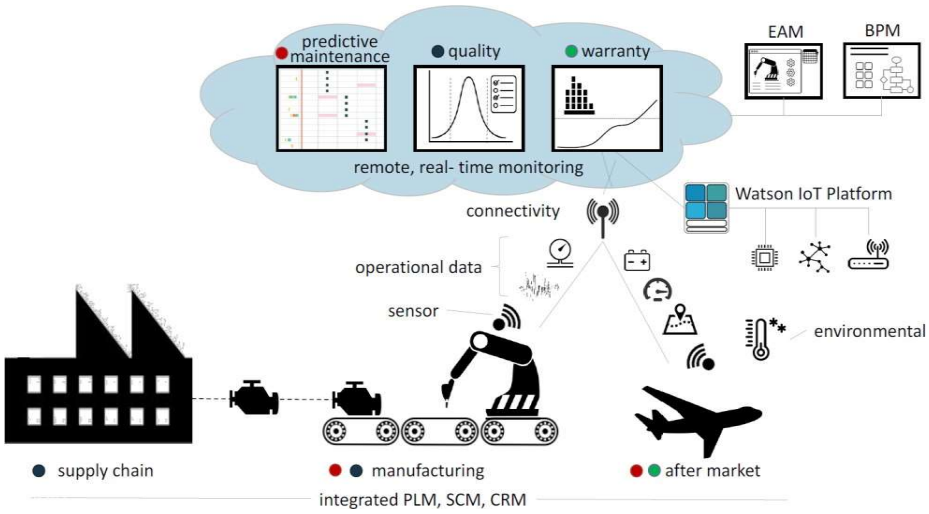
⊙ Smart Home

A smart home means your home has a smart home system that connects with your appliances to automate specific tasks and is typically remotely controlled. You can use a smart home system to program your sprinklers, set and monitor your home security system and cameras, or control appliances likeyour refrigerator or air conditioning and heating. At Constellation we love howenergy-efficient smart homes are, because they save you precious time and money while also conserving energy,



⊘ Smart Supply Chain

The aim of the smart supply chain technologies is to increase efficiency in the supply management processes, to balance the company's market stocks, to provide material cost regulation and reduction, and to keep quality high in order to provide the servicesthat customers demand.



Smart Retail

Smart retail refers to the hybridization between traditional shopping methods and modern “smart” technologies. Through the Internet of Things, data is accumulated by way of communication between implanted devices and computers. As a result, consumers may enjoy a more personalized, faster, and smarter experience. This can manifest as individualized coupons and smartly curated inventories.